State CIO
Agency IT Plans
2007 – 2009 Biennium

Department of Transportation
IT Plan

October 2006

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Chapter 1 - Departmental/Agency Strategic Business Initiatives and Major Business Requirements

The Department of Transportation (DOT) is one of North Carolina's largest State agencies. It has over 14,000 employees that support the transportation infrastructure, including roads, bridges, rail, ferries, aviation, as well as motor vehicle functions. The Department also provides funding to local municipalities for public transportation and enhancement projects. DOT could be considered a Fortune 500 company that spends nearly $3B a year, broken down into $1B for road construction, $1B for road maintenance, and $1B on other types of services to the citizens and motoring public that travel through the state.

The Board of Transportation has defined the following Strategic Plan for Transportation and will guide the functions to be carried out by the department:

System Vision (External)

The Transportation System in North Carolina will provide safe, affordable choices for the movement of all people and products. The system will support and sustain economic opportunities throughout the state. It will be a well-maintained, reliable, multi-modal and connected system that is considerate of local land-use plans, natural resources and the environment. This system will be planned and operated in partnership with communities, local, regional, state and federal agencies, and private entities.

Department Vision (Internal)

The North Carolina Department of Transportation will make decisions in an open and collaborative manner that is responsive to the needs of its customers and employees. The department will promote a safe, desirable working environment and will invest in the continuous improvement and development of the organization and its employees. Employees will be customer friendly, technically competent, fiscally responsible, and environmentally sensitive.

Mission

Provide and support an integrated transportation system and related services that enhance the state's well-being.

Guiding Principles

- Balance
- Choices
- Customer Focus
- Effective Decision Making
- Integrity

- Open Communication
- Partnership
- Performance Excellence
- Safety
- Stewardship

Goal – Provide a safe and well maintained interconnected transportation system that offers modal choices for the movement of all people and goods.

Objectives:
- Strive to meet transportation system needs for services, construction and maintenance.
- Develop partnerships with other transportation providers.
- Support the development of multi-modal transportation systems.
- Ensure transportation safety through the enforcement of applicable state and federal laws.
- Continuously monitor and update the department's long-range transportation plan.

Goal – Provide quality customer service.

Objectives:
- Understand customer requirements.
- Respond to customer needs in a timely manner.
- Strive to meet customer expectations in a customer friendly manner.
- Regularly assess the quality of customer service.

Goal – Demonstrate responsible stewardship of resources.

Objectives:
- Preserve and enhance natural, cultural and human resources while providing a safe and well-maintained interconnected transportation system.

Goal – Develop efficient processes to provide quality transportation services.

Objectives:
- Move projects from conception to completion quickly and efficiently with regular progress completion assessments.

- Apply technology to support efficient processes and effective decision-making.
- Establish policies and procedures that are consistent with the mission, vision and guiding principles.
- Regularly assess progress toward goals and objectives.
- Establish an interactive public communication process.
- Continually search for innovative and flexible transportation solutions including Intelligent Transportation Systems.

Goal – Demonstrate responsible stewardship of fiscal resources.

Objectives:
- Maximize the effective use of existing and potential financial resources.

Goal – Support the development of sustainable, vibrant communities.

Objectives:
- Collaborate with communities in land-use planning that is consistent with community values and state goals.
- Promote the integration of transportation and land-use planning.

Goal – Maintain a quality workforce.

Objectives:
- Provide employees a safe working environment.
- Recruit, develop and retain competent and qualified employees.
- Create a supportive working environment for employees that will keep morale high and motivate them to do their best.
- Create and provide a meaningful recognition system.
- Be an Equal Opportunity Employer.

Goal – Make decisions in a manner that builds trust and mutual respect.

Objectives:
- Collaborate with stakeholders to build consensus in an open decision-making process.
- Share decision-making authority with recognized local, regional, state and federal regional transportation planning agencies.

For 2006, Secretary Tippett's vision for the Department is to:

> Provide a safe, modern and integrated transportation system that expands opportunities for all areas of the state in support of Governor Easley's vision for **One North Carolina**.

The ten objectives are:

1. Seek and implement new measures and resources to meet more of the state's growing transportation needs.
2. Implement the investment strategy identified in the Statewide Long-Range Plan to meet more of the state's infrastructure, modernization and maintenance needs.
3. Seek expanded use of public-private partnerships.
4. Improve project delivery and oversight.
5. Increase investment in the state's rail infrastructure to enhance the movement of goods throughout the state.
6. Expand alternative modes of transportation to provide citizens more options.
7. Improve highway safety through innovative programs and the work of the Executive Committee of Highway Safety.
8. Preserve, protect and enhance the state's natural resources.
9. Create more opportunities for employees and business partners.
10. Improve operating efficiency and security through new technologies.

In support of this vision and these goals, Information Technology (IT) has initiated the following projects:

- Department of Crime Control and Public Safety and DOT developed a transponder project for Commercial Vehicles to improve truck safety (objective 10).
- Expand the functionality of Smartlink, Travelers Information Management System (TIMS), and 511, to improve communication to the traveling public (objective 10).
- Document the processes and workflow within the Natural Environment Unit in order to gather requirements for the environmental permitting process that is critical for highway construction projects (objective 8).
- As part of the NCDOT Crisis Response Executive Team, the Chief Information Security Officer (CISO) and the Business Continuity Planner helped develop the Business Continuity Plan and Continuity of Operations Plan for the Department (objective 10).

In the most recent NC Legislative session, several bills were passed that affect services provided by the Division of Motor Vehicles. Many of these bills require changes to IT Systems, include Lapse in Liability Insurance, differentiations between driver license renewals, and Sex Offender laws. There are indications that NC Legislative Assembly will pass additional bills that impact current IT systems and may result in future projects.

Chapter 2 - Requirements for Transitioning Existing IT Activities/Resources

Current Projects

In review of the DOT IT project portfolio, the list of projects appears to be properly prioritized and adequately staffed. DOT IT is adding initiatives, such as the Software Development Lifecycle (SDLC) and the Information Technology Infrastructure Library (ITIL). These programs will aid in the effective and efficient delivery of software projects to our customers. Additional staffing may be required and the resulting projects may be prioritized higher than projects on the current list.

Applications

After analysis of the applications in the DOT IT portfolio, it has been determined that two (2) applications will be replaced within the next two years. These applications are DOT email and Digitized Drivers License.

Beyond the next two years, but less than five years, the following applications will be replaced.

- Federal Aide Billing
- Project Management Improvement Initiative (PMii)
- Liability Insurance Tracking and Enforcement System (LITES)
- Highway Construction And Material System (HiCAMS)

DOT IT will maintain and enhance existing applications, as required to meet legislative, business and technical requirements.

Infrastructure Assets

Due to the large number of applications in the DOT IT portfolio, we have 200+ servers within data centers in Raleigh. Many of these servers are aging and are in need of replacement, with little or no funding allocated to perform this task. In the most recent legislative session, DOT IT was allocated $1M for server consolidation and refresh. We will seek advice from experts as to the most effective way to consolidate to smaller and faster hardware when replacing this aging hardware. As part of this analysis, we will look at the application portfolio to determine opportunities for consolidation of infrastructure, thus reduce the number of servers needed.

Operations/IT Management

To better service our customers, we will improve our business processes by implementing standard processes. These processes will be based on best practices defined in Information Technology Infrastructure Library (ITIL) or Capability Maturity Model (CMM). DOT IT will select an implementation manager to run projects associated with the program. All DOT IT staff will participate in the initiative. DOT IT is participating in the Operational Excellence Program customer focus groups for Information Technology Services' (ITS) implementation of ITIL.

Human Resources

For the last several years, DOT IT has relied heavily on the supplemental staffing contract. Of the 450+ FTEs in DOT IT, nearly one-half of them were contractors. Starting in the fall of 2004, the Chief Information Officer (CIO) has secured 130 state employee positions to assume the roles of contractors. These "contractor conversions" address current initiatives performed by DOT IT and not future resource needs.

Many DOT IT employees have attended ITIL training provided by ITS. As DOT IT moves into our own implementation, all employees will be required to take the foundation class and many other employees will take the practitioner level classes (i.e. Service Level Management, Change Management, etc). For improved efficiency and effectiveness, DOT IT will work closely with ITS to adopt and/or develop similar processes and procedures.

Chapter 3 - IT Specific Economic-Driven Requirements or Opportunities

DOT IT believes the two following initiatives will benefit the Department economically. Both of these initiates shall reduce costs and improve customer services.

- Server Consolidation and Refresh project migrates applications to standardized platforms (i.e. SAP or enterprise JAVA). This project reduces the numbers of servers required to run applications.

- ITIL implementation enables DOT IT to be more efficient and effective in delivering services to the business.

Chapter 4 – IT Initiatives Developed From and Aligning With Plan Drivers

1) Information Technology Infrastructure Library (ITIL)

 a. DOT will implement the ITIL processes.

 b. The three key objectives of ITIL: (1) provide high quality, reliable, and cost effective services; (2) adopt a continuous improvement approach to IT service quality; (3) ensure that the IT services meet the current and evolving needs of the business.

 c. Start in the fall of 2006 and implement within 12 to 18 months.

 d. Will work closely with ITS and its Operational Excellence Program (OEP).

 e. Will work closely with ITS and its Operational Excellence Program (OEP).

 f. $500,000 to $1,500,000 from DOT funds approved by the CIO and CFO.

2) Email

 a. DOT will move to a supported version of email; NCMail or an Exchange solution.

 b. Provide a wide variety of communication options to DOT employees and customers.

 c. Start in the first quarter of calendar year 2007 and implement within six (6) months.

 d. Will be part of a statewide or enterprise solution.

 e. Will be part of a statewide or enterprise solution.

 f. $1,000,000 from DOT funds approved by the CIO and CFO.

3) Information Security

 a. DOT will continue to develop the policies and standards necessary to safeguard information assets.

 b. To develop and implement the policies and standards necessary to safeguard DOT's information assets.

c. Start in the fall of 2006.

d. Will work closely with the DOT 2005 business plan.

e. Will work closely with the State CIO's security initiatives.

f. $200,000 from DOT funds approved by the CIO and CFO.

4) BSIP (SAP) Upgrade

a. DOT will upgrade the BSIP system (SAP) from 4.6c to a newer version of the software.

b. BSIP is currently running on SAP 4.6c since going live April 2003. DOT requires the BSIP system be migrated to a newer version of the software.

c. Start in the summer of 2007 and implement within 12 to 18 months.

d. Migration puts the system on better supported software and allow for easier enhancement to meet the changing business requirements.

e. Will support the State Controller's BEACON implementation.

f. $4,000,000 from DOT funds approved by the CIO and CFO.

5) Federal aide billing rewrite

a. DOT will rewrite the portion of BSIP that allows for re-imbursement of federal funds for construction projects.

b. Re-engineer the process and implement in BSIP.

c. Start in the spring of 2008 and implement within 12 to 18 months.

d. N/A

e. N/A

f. $4,000,000 from DOT funds approved by the CIO and CFO.

6) PMii re-engineering

a. DOT will rewrite the portion of BSIP that allows for the tracking of Transportation Improvement Projects (through letting).

b. Re-engineer the process and implement in BSIP.

c. Start in the spring of 2009 and implement within 12 to 18 months.

d. N/A

e. N/A

f. $4,000,000 from DOT funds approved by the CIO and CFO.

7) Collect County Tax with Vehicle Registration

a. In support of HB 1779, DMV will collect vehicle property tax for the North Carolina counties when a vehicle registration is issued or renewed.

b. The project will improve the collection of property tax on vehicles. It will also standardize the valuation of vehicles across the State.

c. The project is scheduled to begin in the 3rd quarter 2007 with implementation on July 1st, 2010.

d. The project will coincide with work efforts of the Department of Revenue and the North Carolina Counties in accordance with the changes specified in HB 1779. The project will work closely with the State and DOT Project Management Offices.

e. N/A

f. $39 million (development and 5 year life cycle cost) which will be funded by the counties using late property tax fees collected by the counties.

8) Liability Insurance Tracking and Enforcement System (LITES) Rewrite

a. The LITES system is responsible for ensuring insurance exists for all registered vehicles as specified in the Vehicle Financial Responsibility Act of 1957. The project will rewrite the LITES system to replace non-standard software and add required functionality.

b. The existing LITES application was written using Object Pool software from the Sapiens Company to expedite the development process The Object Pool software has presented a number of problems including high maintenance costs, scarcity of Object Pool programmers, high processing costs, and system limitations. The project to rewrite LITES supports the objective of replacing outdated or inadequate applications.

c. The project is scheduled for implementation in the 4th quarter of 2010.

d. The project will impact various DOT sections including DMV Driver and Vehicle services and DMV License and Theft. The project will work closely with the state and DOT Project Management Offices.

e. N/A

f. Approximately $6 million (development and 5 year life cycle cost) from DOT funds approved by the CIO and CFO.

9) Online NMVTIS (National Motor Vehicle Titling Information System)

a. STARS (State Titling and Registration System) will be enhanced to provide:

   i. Real-time interface with AAMVA's (American Association of Motor Vehicle Administrators)

   ii. Real-time interface with NMVTIS to access brand, titling, and stolen vehicle information from other states to reduce titling fraud

   iii. Storage of vehicle information into the NMVTIS database.

   NMVTIS is a national database of vehicle titling and registration information.

   The Batch NMVTIS component was implemented by the Division of Motor Vehicles (DMV) in 2003.

b. Online NMVTIS will help to reduce titling fraud by real-time verification of the validity of out-of-state titles prior to issuing a new NC title. In addition, other states can use the federal vehicle database to determine if vehicles leaving North Carolina are stolen before issuing titles.

c. It is projected that the project will start in the third quarter of 2007 and will implement in the fourth quarter of 2008.

d. The project will work closely with the state and DOT Project Management Offices.

e. N/A

f. Approximately $3 million (development and 5 year life cycle cost) from DOT funds approved by the CIO and CFO and possibly supplementary funding from AAMVA grants.

10) Real ID Act Initiative

a. NCDMV will implement the Real ID Act processes.

b. The key objective of the Real ID Act Initiative is to establish a national network to track all drivers. To ensure that North Carolina meets the requirements specified in the act, IT will work toward the following

objectives: (1) develop a secure and reliable identity verification system that conforms to standards established by the American Association of Motor Vehicle Administrators (AAMVA) and (2) provide for secure handling of confidential data.

c. Work toward meeting AAMVA requirements by the specified date of May 11, 2008.

d. Work closely with business representatives to ensure that all business requirements are met.

e. Work closely with all of the interfacing and support systems within the Information Technology group.

f. IT cost for development through a 5-year period is estimated at approximately $100,000,000.

11) Digitized Driver License (DL)

a. NCDMV will establish a digitized customer tracking system to ensure a one-to-one association between drivers, driver records and driver licenses, and to implement other requirements of the Real ID Act.

b. The key objectives of the digitized customer tracking system are as follows: (1) enable positive identification of the DL/ID card holder, (2) in the case of a DL, to also specify the driving privileges granted to the DL holder by the State, (3) achieve the above in a variety of environments, including DMV offices, commercial environments such as at airline counters, and during roadside law enforcement. In order to curb the misuse of DL/ID cards, the following is required: (1) the DL/ID card must be a secure document, and (2) the manufacturing and issuing of DL/ID cards must be controlled.

c. Begin development of the system in May, 2007, and finish in 12 months.

d. TBD

e. Possibly NCID

f. IT Cost projected as $50,000,000 (estimated using a cost of $4.00 per card).